

Transportation System in Japan: A Literature Study

Geradi Yudhistira

Bina Nusantara University
geradi_emsil@yahoo.com

Moh. Iqbal

STMT Trisakti
stmt@indosat.net.id

Lira Agushinta

STMT Trisakti
stmt@indosat.net.id

ABSTRACT

In Japan, the transportation system is the vein of the country in order to ease the flow of people, goods, and information, supporting the achievement of optimum economic resources allocation. To that end, the transportation service should be fairly evenly available and affordable purchasing power. This is a literature study, whose main data sources are books, literature, records, and reports that have to do with the subject matter being solved. The results show that Japanese transportation system is very modern, comfortable, secure, punctual, and well-organized, as well as outstanding in service and responsible, so that people use public transport rather than private cars. Transportation in Japan as in other countries includes land, sea, and air transports. On land, there is a transport in the form of excellent trains and become a major transportation in Japan. In addition, there are also subway trains. To connect between islands, especially the four largest islands (Hokkaido, Honshu, Shikoku, and Kyushu) there are ferries as a means of crossing. Also available is a comprehensive international air service through two major airlines, Japan Airlines and All Nippon Airways, as well as foreign airlines based on the operators who fly all over the world. Transportation in Japan is generally accommodated by Japan Railway (JR), the state-owned company JR Bus, JR Train, and others.

Keywords: Transportation System, Japan

Introduction

Transportation is the vein of development for a country in order to ease the flow of people, goods, and information, supporting the achievement of optimum economic resources allocation. Therefore, the problem of transportation especially which is related to public transport becomes very important for the life of big cities, regarding that both mass and individual public transports are the backbone of citizens' movement to perform their activities in economy, education, and government (Hariyono, 2015). Thus, transportation is an important part of a civilization. In cities, transportation becomes an element that forms a city, connecting various factors and sectors. The physical movement of human beings and/or goods can be seen from the degree of relation in transportation/traffic through a connecting infrastructure called road (Oktavianoor, 2010).

Furthermore, the role of transportation is getting more vital in line with the advance of economy and prosperity of a city. If transport management is not carried out carefully, transportation problems such as traffic jam, difficulty to find parking area, as well as the problems related to traffic order will happen. City transportation problems basically are related to four factors, i.e. 1. Human beings (discipline and discreteness in traffic); 2. Infrastructures; 3. Means of transportation (personal vehicles and traffic); 4. City Development Plan. The four factors are

closely related each other (Marbun, 1990, in Oktavianoor, 2010).

The importance of transportation for people is caused by some factors, among others is the geographical condition of a country. Japan is an archipelago country in the East Asia, situated in the west end of Pacific Ocean, in the east of Japan Sea, and be neighbors with People Republic of China (RRC), Korea, and Russia. The most northern islands are in Okhotsk Sea, and the most southern area is a group of small islands in the East China Sea, exactly in the south of Okinawa being neighbors with Taiwan. Japan has very small population if compared with the population of Indonesia. However, Japanese people are more advanced if compared with Indonesian people, for example, in transportation (Figure 1). Transportation in Japan can be considered as the most comfortable, secure, modern, punctual, and well-organized around the world (Rodrigue, 2014).

There is a very close relationship between people's behavior and transportation. Some physical environment facts, such as space arrangement and physical condition, have direct impact on the people's behavior. Circulation and movement are of physical environment factor that influences the people's behavior. This factor includes people, goods, and the objects used for car movement, train, highway and railway as well as the regulating forms like corridor, portal, turnstile, and open space (Ogesby and Hicks, 1995) (in Oktavianoor, 2010). It is

stated that transportation system in Japan is acknowledged as the best in the world, and this condition much helps its economy. The excellent transport is also an instrument for attracting as many overseas tourists as possible to visit the Sakura Country.



Source: <http://www.berkuliah.com/2014/09/sistem-transportasi-jepang.html> (5 October 2015)

Figure 1 Land Transport in Japan, 2015

Japan has 1,152,207 km highway, including country road, local road, and toll road that connect main cities in Honshu, Shikoku, and Kyushu. Some of the main cities in Japan, such as Tokyo, Fukuoka, Osaka, Sapporo, Sendai, Kobe, Kyoto, Nagoya and Yokohama have metro transportation system. In addition, the highway in Japan reaches 1,152,207 kilometers long (Land Transportation System in Japan) (5 October 2015). Thus, in addition to train, another transport used by many people in Japan is bus, which has prime quality. The same as land transport, air transport in Japan is also important in supporting various activities of its citizens.

Japan international airport is the entrance gate for overseas tourists to enter the country. The airport becomes

an instrument for domestic flight. Nevertheless, if someone wants to utilizes other ways, he or she can take a ferry which is also the main inter-island transport in Japan (<http://id.wikipedia.org/wiki/Shinkansen>) (4 October 2015). It is stated that in order to connect an island with another one in Japan, especially to the four largest islands (Hokkaido, Honshu, Shikoku, and Kyushu), ships are available as a means of crossing. However, in the empirical level it does not mean that the successful transportation system in Japan is not accompanied by any problem. Transportation problems arise along with the advancement of transportation itself. With the high frequency of railway trip in Japan, the potential for the increasing number of accidents will be high as well.

Moreover, noise, air pollution, and other bad things become a challenge in Japan. The places in Japanese big cities in which many trains operate until late of night need an excellent railway transport management since it is very risky. The basic problem is “How is the transportation system in Japan?” This study uses library research with descriptive-qualitative approach.

Results and Discussions

Public transport in Japan is known as the best transportation system in the world because of its punctuality, safety, and comfort. Almost all Japanese people prefer using public transport to driving their own vehicle, thus automatically avoiding the crowd of vehicles on streets and long traffic

jams. Transport in Japan is very famous due to its punctuality, excellent and responsible service, and environment friendliness, so that many people in Japan will choose public transport rather than private vehicles. This Sakura Country is reknown as a country with a very comfortable, sophisticated, secure, and well-organized transportation system. Like in other countries, there are land, sea, and air transports in Japan, but the backbone of the Japanese transportation system is train (Sistem Transportasi Jepang, html) (4 October 2015).

It is stated that the transportation in Japan is mostly accommodated by Japan Railway (JR), a state-owned enterprise, but there are also JR Bus, JR Train, and others. Although other companies accommodate the transportation in Japan as well, but JR is still the giant in Japan. Here are the decriptions of each transportation system in Japan.

1. Water Transport

Concerning the water transport in Japan, it can be explained that there is about 1,770 kilometer of water channel in Japan, where ships sail to all countrysides and Japanese coastal areas. To connect harbour cities in Japan as well as to connect small islands with other islands, people use ferries and vessels. There are 22 main harbours stipulated as main harbours by the Ministry of Land, Infrastructure, and Transportation Japan including Chiba, Fushika/Toyama, Himeji, Hiroshima, Kawasaki, Kitakyushu, Kobe, Kudamatsu, Muroran, Nagoya, Niigata, Osaka, Sakai/Senpoku, Sendai/

Shiogama, Shimizu, Shimonoseki, Tokyo, Tomakomai, Wakayama, Yokkaichi, and Yokohama (Sistem Transportasi di Jepang) (6 October 2015).

Japan has 662 vessels with the volume of 1,000 tons registered bruto (GRT) or more, 13,039,488 tons registered bruto (GRT) or 18,024,969 metric ton dead weight tonnage (DWT) (Munawar, 2007) (japan-guide.com) (4 October 2015).

Furthermore, it is explained that there are 146 bulk carriers, 49 cargo vessels, 13 chemical tank vessels, 16 combined bulk vessels, 4 vessels with combination of grain and oil, 25 container vessels, 45 liquid gas vessels, 9 passenger vessels, 2 vessels with combination of passenger and cargo, 214 oil tank vessels, 22 refer cargo vessels, 48 roll-on/roll-off vessels, and 60 carrier vessels (1999 est). In addition to serving domestic routes, Japan also serves overseas routes. The vessels have their routes which have been well organized by Ministry of Transportation. Some vessels are dedicated for a cluster of domestic routes and some others for overseas routes. To connect harbour cities in Japan as well as to connect small islands to other islands people use ferries and vessels. Japan is also reknown for its commercial fleet; its vessels are not inferior to other famous vessels in the world. Japan has the world second biggest commercial fleet after Liberia with shipping capacity of 291.6 million ton gross in 2012, including ocean liner and coaster.

2. Air Transport

Japan also provides comprehensive

services for international flights through two major airlines, namely Japan Airlines and All Nippon Airways. There are also operator-based foreign airlines that fly all over the world. Japan now has 98 airports. The main international gates are Kansai International Airport in Osaka and Chubu Centrair International Airport in Nagoya. For domestic main connection, it is served by International Airport of Tokyo, which is the busiest airport in Asia and the fourth busiest in the world. The biggest international airports in Japan are Tokyo's Narita Airport, followed by Osaka's Kansai Airport, Tokyo's Haneda Airport and Nagoya's Central Japan Airport. In the fiscal year 2012, Japan occupied the second among 168 members of International Aviation and Travel Association (IATA) in terms of km/passenger carried (japan-guide.com) (4 October 2015).

The main airports in Japan are Narita International Airport, Tokyo International Airport or Haneda International Airport, Osaka International Airport or Itami International Airport; Kansai International Airport; Centrair Chubu International Airport near Nagoya; Nagoya Airport or Komaki Airport; New Chitose Airport near Sapporo; and Fukuoka Airport.

In addition to land and sea transport, Japan is also famous with its air transport. For example, Japan Airlines (JAL). JAL, which is established in 1953, operates many international flights and is the biggest international airline in Japan. The number of passengers going in and out Japan using international airlines' airplanes

is 38.7 million in the fiscal year 2012. The new Tokyo international airport, which was opened in 1978 and located around 60 kilometers to the east of Tokyo in Chiba prefecture, has helped Japan in handling the growth of international air traffic passengers (Figure 2) (japan-guide.com) (2 October 2015).

Furthermore, it is explained that the main international gateway is Narita International Airport (Tokyo Area), Kansai International Airport (Osaka/Kobe/Kyoto area), and Chubu Centrair International Airport (Nagoya Area). The main domestic connecting airport is Tokyo International Airport (Haneda Airport), the busiest airport in Asia and the third busiest in the world; the other main traffic connection is through Osaka International Airport, New Chitose Airport outer Sapporo, and Fukuoka Airport.



Source: <http://www.berkuliah.com/2014/09/sistem-transportasi-jepang.html> (5 October 2015).

Figure 2 Japan Airlines (JAL)

3. Land Transport

There are various kinds of land transport in Japan, from the simple to the most sophisticated. The kind of land transport which and becomes its pride is train, especially with the existence of the fastest train (bullet train) named Shinkansen. There are also subway, bus, and taxi. Japan has 3,483 express highways. The network of national express highways in Japan will increase by 2,466 kilometers more with the completion of 19 routes which are being developed, spanning between Nagoya and Kobe and Tomei express way which connects Tokyo and Nagoya.

a. Railway System

Train is the main transport in Japan, especially to connect main cities and becomes commuter transport in big cities like Tokyo and Osaka. Seven railway regional companies in Japan called Japan Railways cover most cities and villages in Japan. Beside Japan Railways, there are also private railway companies, local government companies, and joint venture of private and local government. The total length of railway in Japan is around 23,670 km, mostly equipped with electricity current. The train route map in Fukuoka, Kobe, Kyoto, Nagoya, Osaka, Sapporo, Sendai, Tokyo and Yokohama have metro system, i.e. the railway system to carry passengers who are mostly commuter (land transportation system in Japan) (5 October 2015).

In Japan, train becomes the main facility of people transportation system, especially for massal transportation with high speed among big cities and commuter transportation in metropolitan areas. Japan has the fastest train in the world, allowing the users unnecessarily take long time even for travelling very long distance. It is explained that five stations (Shinjuku Station, Ikebukuro Station, Shibuya Station, Umeda Station, and Yokohama Station) serve more than 2 million passengers every day. JNR operates one of the fastest trains in the world, namely shinkansen train, which runs at maximum speed 210 km/hour. The station which has been opened since 1 October 1964 provides a very safe super express service taking 3 hours 10 minutes from Tokyo to Osaka vice versa (www.japan-guide.com) (8 October 2015).

It is subsequently extended up to Hakata in Kyushu on 10 March 1975. From Tokyo to Hakata can be travelled in 6 hours 40 minutes. So, how crowded the train schedule in Japan is. Tohoku shinkansen has connected Tokyo and Marioka since 2 June 1982, whereas Joetsu Shinkansen train has operated Tokyo-Nigata route since 15 November 1982. The end terminal for Tohoku and Joetsu in Tokyo is Omiya Station, around 30 km to south west from central Tokyo. Nagoya is one of the first cities that implement subway train system (Chikatetsu) in Japan. It is

also the city with the highest travel cost in Japan. However, many comfortable facilities can be obtained by Nagoya citizens. Inter-island transport in Japan can pass through tunnels or bridges, acknowledged as miraculous technology in transportation invented by this country's experts (<http://www.wavega.co.cc/2015>) (3 October 2015).

Train is one of transportation systems which is very effective and efficient, saving time with its freeway system because it has its own lane so that it does not bother other traffics. Therefore, it is not surprising that the transportation system in developed countries is much switched to using trains. Japan is one of the developed countries in Asia. The frequently used mode of transport is train. To develop its transportation system, Japan learns from history. Japanese Government has projected the development of its transportation system the same as Europe (Germany, France, etc.) and United States of America. They start creating and developing railways (<http://studi-jerman.blogspot.com/2015/1/sistem-transportasi.html>) (6 October 2015).

The first railway was developed after a four-year revolution (1872) connecting Tokyo and Yokohama. After that, in a relatively short time (about five years), almost all cities in Japan had been connected by railways. Land public transport to connect among regions in Japan is train; the

regular train network in Japan uses subway system (Figure 3). As the center of Great Tokyo region, Tokyo is the center of train, land transport, and domestic and international air transport in Japan. Public transport in Tokyo is dominated by train and subway network which is "clean and efficient", while bus, monorail, and tram play the secondary role.

It is said that Tokyo has 15 lines covering hundreds kilometers long. In addition, there is also a very famous Shinkansen train. Shinkansen is a super express electric train which runs at the maximum speed 250 to 300 km per hour. Shinkansen network has five routes spreaded in Tokyo and Osaka. So far, there is no fatal accident in its operation, making Shinkansen considered as the most secure high speed train system in the world. Railway transport in Japan does provide maximum service with low tariff, high speed, and punctuality.

Beside trains, there are also Subways to connect the Japanese islands, especially the four biggest islands (Hokkaido, Honshu, Shikoku, and Kyushu). For example, Tokyo has subways since 1927. Known as Tokyo Subway, this is the widest network of city subway in the world. In addition to circle the city, its railway connects Tokyo Metropolis to suburban areas with total length as long as 428.8 kilometers. There are 14 lanes, operated by joint operation

of private and local government. To ease the users, the subway in each lane has different color. Likewise, there are 482 stations with different colors and numbers.

According to Japan Visitor site (2013), every day not less than 12.7 million people are carried by Tokyo Subway, exceeding the average number of London Tube passengers in England, the oldest subway network, which is 3.4 million people per day. This Japanese transportation system is very busy, subway train comes in each station every five minutes in average, and it is punctual. The lowest ticket price is 160 yens, approximately Rp17,300, but the passengers who want to switch to another lane should pay for additional ticket (<http://santysusan.blogspot.com>) (4 October 2015). Furthermore, the passengers who frequently use this subway are suggested to buy PASMO card or SUICA card, like a subscriber card for electric train (KRL) in Jabodetabek. This card is expensive but it facilitates the users when they want to switch to another lane as well as saves time for not queueing to get additional ticket.

Tokyo Subway operates every day from 5 am and the last subway departs from the end station at 12 pm. The busiest time is around 7:30 to 9:30 am when people go to work and from 5:30 to 7:30 pm when people go home from work. At rush hours, Tokyo Subway provide special coach for women

labeled with a pink sticker to prevent sexual harassment. Intercity transport network in Japan generally uses speedy train. With the speed of 270 kilometers per hour, the train called Shinkansen can reach the second biggest city in Japan, Osaka (552 km) in 2 hours 30 minutes. This duration includes transiting in several cities like Yokohama, Nagoya, and Kyoto. This train does not make any noise although runs very quickly. Passengers sit and can sleep very well. The coach is very clean and the officers serve the passengers friendly and politely. Anyone using this express train will feel comfortable and pleasant.

Shinkansen (Figure 4), also called bullet train, is a super express railway operated by four companies joining in Japan Railways (JR). Shinkansen is a main intercity transport facility in Japan beside airplane. Its maximum speed can reach 300 km/hour. Shinkansen is opened on 1 October 1964 and immediately gets its success by serving 100 million passengers in less than 3 years since 1967. The security level of Shinkansen is categorized very secure. To anticipate earthquake, this train is equipped with detection system which will stop the train if the earthquake occurs. In term of punctuality, JR Central reports that Shinkansen is punctual with averaged difference 0.1 minute or 6 second from the schedule. All facilities (public transports) provided by Japan government make

people enjoy and feel facilitated.

Transportation system in Japan pays much attention to the security and comfort for the passengers. The trains are in the clean condition, cool with the available AC and comfortable seats. All facilities are well provided. The train departure time is so clear that passengers will not be upset for cancelation or delay. Generally, people in Japan like train as the mode of transportation rather than bus, because its time and lane is well organized and it is faster. The economic life of train to ensure the passengers safety is 5 to 10 years. The kinds of train in Japan are: Local train, stops in every station both big and small; Fast train, passes through several small stations; Express train, stops only in some stations.

Express train passes through less stations than fast train does; Super express train, stops only in big stations; and bullet train, the fastest train, namely Shinkansen. Shinkansen trains has nine routes spanning from the north to south of Japan, that is Tohoku (647.9 km from Tokyo to Shin-Aomori; connecting big cities in the north of Tokyo including Utsunomiya, Koriyama, Fukushima, Sendai, and Morioka), Akita, Yamagata, Joetsu, Nagano, Tokaido (can be called shinkansen artery in Japan). Shinkansen connects big cities in Japan such as Tokyo, Nagoya, and Osaka (stretching as long as 552.6 km), Sanyo, Kyushu (connecting Hakata and Kagoshima-Chuo) (<http://www.id.emb-japan.go.jp>) (6 October 2015).

[id.emb-japan.go.jp](http://www.id.emb-japan.go.jp)) (6 October 2015).



Source: <http://www.id.emb-japan.go.jp> (5 October 2015)

Figure 3 Shinkansen train

Subsequently, those operating between Shin-Yatsushiro and Kagoshima-Chuo, and Chuo are: 1. Local train (futsu-densha): stops in every station, both big and small; 2. Fast train (kaisoku-densha): usually passes through several small stations. The ticket price is not different from the ticket for local train; 3. Express train (kyuukou-densha): stops only in some stations, less than the number of stations passed by fast train. The tariff is more expensive than fast train; 4. Super express train (tokkyuu-densha): stops only in big stations. The tariff is around ¥500-¥4000; 5. Bullet train (shinkansen): the fastest train. Shinkansen has different lane from other trains in Japan. The ticket price starts from ¥800 to ¥8000 (<http://id.wikipedia.org/wiki/Shinkansen>) (6 October 2015).

There are some kinds of shinkansen train: a. Hayabusa (The series E5 Shinkansen). Hayabusa is the

shinkansen operating on the route of Shinkansen Tohoku, from Tokyo to Shin-Aomori/Sendai. Its speed reaches up to 300 km/hour. Even, it has reached 320 km/hour in the end of March 2013; b. Tsubame (The new series 800), operating on the route of shinkansen Kyushu, another version of Kyushu shinkansen. The maximum speed is 260 km/hour; c. Nozomi (The N700 series), the most famous Shinkansen among others, operating on the route of shinkansen Tokaido. It has speed up to 270 km/hour. It connects three metropolitan cities: Tokyo, Nagoya, and Osaka. After arriving in Osaka, shinkansen Nozomi continues to go to west until reaches the speed of 300 km/hour; d. Sanyo shinkansen (700 Hikari Rail Star Series). It operates on the route of shinkansen Sanyo, has special compartment for four people. It is suitable for little meeting of business people on the go. The maximum speed is 285 km/hour; e. Joetsu shinkansen (E4 Max Rolling stock series). It operates on the route of shinkansen Joetsu. The maximum speed is 240 km/hour (<http://id.wikipedia.org/wiki/Shinkansen>) (3 October 2015).

Japan also has subway train. This train is one of public transports with big capacity and high frequency as well as high level of comfort, running underground (subway). This train is developed by making underground tunnels as its lane. It generally operates in big cities like Tokyo. Subway is

also used in a little scale in mining areas. Subway become the appropriate public transport because it is the most effective, the cheapest, comfortable, fast, and free of traffic jam. Subway is much liked because of its punctuality, comfort, and best service. In Tokyo, subway has excellent services: clean, the seats can be used as body warmer, and so on.

The types of subway stations are: 1. Linear Station/Single Station, a station that has one or two parallel tracks. This station tends to have linear or straight form. This is because the track is simple and has no track intersection. Therefore, the zone division or passenger circulation is not so complicated as the station with track intersection; 2. Intersection Station, a station that has intersection track of train. This station tends to have a complicated form. This because the form of station should follow the position of track so that the form of this station as a whole may be square, rectangle, or irregular. So far, the Subway station is developed using two systems, i.e.: 1. Open Technique system or Cut and Cover Technique (<http://ngepostingdoang.blogspot.com/2014/03/stasion-kereta-api-bawah-tanah-di.html>).

The development system of this station starts with digging land from the surface until certain depth as planned and then the surface part is recovered by land. With this system, the position of station to be developed

can not be under the constructed or existing building since the surface above the station to build should be empty or the building on it should be destroyed first in the construction process. 2. Mining Technique System or land drilling. This system starts with digging land from the surface until certain depth as planned and then continue to underground drilling in accordance with the track position as planned.

For the sake of smoothness run of subway, it should be supported by safety, security, comfort, and special place for disabled people, health facilities and public facilities. Besides, the subway operation should be equipped with safety facilities. Information to passengers is an important aspect that should always be available sufficiently before they get on the subway, during on the subway, and after they get off the subway. Therefore, the government must pay attention to all the aspects related to public transport mode, especially train as the most effective and efficient mode of transport.

The ticket can be bought from automatic vending machine, at the station ticket both, or online via internet. The procedure of buying ticket from automatic vending machine is as follows: 1. Decide the destination by seeing the map installed at the vending machine. The map shows the train, station, and destination. The ticket price is available on the map. 2. Insert

the coin into the vending machine. It receive money in the denomination of 10, 50, 100, 500, and 1000 yen. 3. Choose the quantity of tickets to be bought. 4. Press the button that shows the total amount of purchase. 5. Pick the ticket(s) which come out along with the change (if any). To reserve ticket at the ticket both or online via internet, the information that should be noticed includes: number of passengers, date of departure, departure station, destination station, name of train, time of departure, the provision of reserving seats or not, and the provision of smoking or not smoking.

Ticket for shinkansen train is different from common trains. Shinkansen ticket is classified into two: ordinary and green car. The ticket for ordinary class is cheaper than the ticket for green car. However, green car class provides wider space for footing. In the ordinary class, there are 3x2 seats each row, whereas in the green car class there are 2x2 seats each row. The ticket price for shinkansen varies. It can be reserved for subscription as wanted, 7 days, 14 days, or 21 days (Table 1). Some discount is provided for train ticket. For those who want to subscribe, JR provides Japan Rail Pass for one way ticket and for many times. With Japan rail pass we will save the transportation cost.

Table 1 Ticket Price for Shinkansen Train

Type	Green car		Ordinary	
Duration	Adult	Children	Adult	Children
7 days	¥37,800	¥18,900	¥28,300	¥14,150
14 days	¥61,200	¥30,600	¥45,100	¥22,550
21 days	¥79,600	¥39,800	¥57,700	¥28,850

Source: www.japan-guide.com) (5 October 2015)

For the tourists who visit Japan for a short time, they can also take advantage of this Japan Rail Pass facility. This ticket can not be purchased in Japan. To buy it, one should pay in the representative office of JR out of Japan. Arriving in Japan, the purchase note will be changed with Japan Rail Pass ticket. The price varies depending the travel, duration, and the seat reserved. The lowest price, for 7-day travel, is ¥28,300 and the highest price, for 21-day travel (superior class) is ¥79,600.

Japan Rail Pass ticket can be used in all operation areas of JR, including Hokkaido Rail Pass, JR East Pass, JR-West Rail Pass, and JR-Kyushu Rail Pass. Japan Rail Pass also gives other discounts to the passengers, such as:

- 1) Seishun Juhachi Kippu: seasonal ticket discount for passengers who want to travel around Japan but the discount is not valid for shinkansen train. The discount can be used many times and as far travel as

wanted in the national network of JR based on the deadline. No age limit to buy the ticket. The ticket is sold three times a year: spring, summer holiday, and winter holiday. The ticket can be bought in all JR stations in Japan, midori-no-madoguchi, travel service center, JR representative offices, and travel agent. In 2007 the price of this ticket was ¥11,500.

- 2) Hikari Hayatoku Kippu: a 10% ticket discount. It can be used for travelling with Hikari train passing through Tokyo, Yokohama, Nagoya, Kyoto, Osaka, Kobe, and Himeji. The ticket must be reserved at least one week before the departure day.
- 3) Hikari Kodama Jiyusekiyo Hayatoku Kippu: a 25% ticket discount. It can be used for Hikari or Kodama train passing through Nagoya and Osaka. The procedure to buy this ticket is the same as Hikari Hayatoku Kippu.
- 4) Puratto Kodama Economy Plan, a 25% discount. It is used for Kodama train purchahsed at least one day before the departure day. This ticket discount usually gives soft drink, liquor, or coffee as a bonus. People in Japan generally travel using train, especially for routine activities like going to school and office.

Japanese people consistently use this transport for some reasons, such as its punctuality and the regulations

for taking train. The regulations are not under a law umbrella. They are not written, but they have been agreed by Japanese people so that no one will violate them. There is no punishment from the authority for the violators, but they will be socially punished by other train users. With these unwritten regulations, people's comfort will be secured while they are on the train. So, all people either they are Japanese or foreigners who take a train should keep their manner during on the train (<http://id.wikipedia.org/wiki/Shinkansen>) (6 October 2015).

The following are the rules (tokyoguide.net) (4 October 2015):

- 1) Not standing in front of the door including in the rush hour. If one can not help stand in front of the door, he/she must be willing to move aside when asked to. It is because the one standing in front of the door will make a jam since people find difficulty to step on and down the train.
- 2) Not bringing big backpack and not putting luggage on the floor. This will bother the people who want to pass through. Backpack will make the space narrower, while the luggage on the floor make people stubbed. It is better not to put luggage on the chair. It is for sitting, not for putting luggage. Big luggage is put in the Luc baggage, while the people who sit should put their luggage under their seat (don't miss it when going to step down).
- 3) Prioritize the people who want to step down, especially at big stations such as Shibuya, Shinjuku, Ikebukuro, etc. because in rush hours, many people step down at big stations.
- 4) When seeing the train is full of people, take the next train. The door will not close if people make a crowd near the door.
- 5) There is enough time when the train stops at a station. But it does not mean that we can relax and spin out time because many people step on and down the train, so it takes long time to stop including at village and city stations.
- 6) Switch on the Silent mode in the care phone while on the train. Hold on call as you can as possible. If near the prioritized seat, power off the care phone.

Beside those rules, dedicated trains for women have been operated in Japan. The trains are Saikyou Line and Chuo Line. According to "kotsu.metro.tokyo.jp" (5 October 2015):

- 1) It is better power off care phone if it bothers while on.
- 2) Do not make any noise. If listening to music through ear phone, ensure the sound does not leak, and do not

chat. If can not help say something, try to say like whispering.

- 3) Do not insist on stepping on the train while it is running. Take the next train.
- 4) Do not make up your face on the train. This will bother the people surrounding you.
- 5) Obey the priority seats. Courtesy seats are provided for the elderly, the disabled, pregnant mother, and one taking care of baby. There are posters mentioning courtesy seat.
- 6) Women-only car, this train operates in rush hours. Other than women, male passengers may use this facility but only for children (under five years), the disabled, and their nursemaid. There is no punishment for the violators, but they will be ashamed. It is difficult to identify early pregnant mother, so it is better she show a specific symbol that she is pregnant. Japanese people much care the health of pregnant mother. Some other manners are:
 - a. Not eating and drinking on the train, especially what will become garbage;
 - b. Not sitting with legs wide open and lifted high because it bothers other people;
 - c. Not looking at opposite sex continuously. Especially for male passengers, they should not look at or even touch women. Recently there are many chikan (sex abusers) in Japan which is very popular now. If this

happens, the doer can be reported to police; d. Not sitting on the floor, because no enough space for sitting on the floor and it will bother the people who are passing through; e. Put on a masker when sick. Cover with cloth or tissue when sneezing or coughing. There are still many manners Japanese people obey when they are on a train. To inform these manners to people, there are interesting posters at some stations and some trains. The content is not a prohibition but an invitation to do better things. For example, not standing in front of the door, not putting luggage on the place that can bother other people, prioritize the passengers who want to step down especially at big stations, it is better to take the next train when the train is so full, switch on the silent mode in the care phone but it is better to power off.

Avoid making or receiving calls, do not make noise, do not make up on the train, do not eat and drink on the train, do not even make garbage, do not sit on the floor, do not flirt and make physical contact with opposite sex, put on masker or cover when sneezing and coughing. All these rules should be obeyed not only by Japanese natives but also by foreign tourists and students.

b. Taxi

The tariff of taxi tends to be the most expensive among other modes of transport. Taxi (Figure 5) is more used because it can bring the user to the address written in Japanese language or in the business card. What should be known about Japanese taxi is that if the red lamp on the left bottom of the glass flares, it means the taxi is vacant and we can use it. The prospective passengers should be careful when approaching the left-behind door of the taxi because it opens and closes automatically from the driver's panel. Note that all city taxis are non-smoking.



Source: <http://tatu737142.html.xdomain.jp/01xxz22.htm> (5 October 2015)

Figure 5 "Taxi" Mode of Transport in Japan

Most Japanese taxi drivers will open and close the door for you. Understand that the driver does not get out of the taxi and open the door, but rather uses controls near the driver's seat to operate the doors. Also note that all taxis in the city are non-smoking (Tokyo Monorail Co., Ltd. 2014) (6 October 2015).

c. Bus

Japan also has another public transport that is not inferior in service, i.e. bus. Japanese buses pass through urban areas, so it is suitable for tourists to enjoy the scenery and the daily life of Japanese society. The fare is also cheaper than shinkansen which is relatively expensive. Japanese bus is relatively different from Indonesian bus; for far enough distance, it is usually equipped with blanket, television, toilet, telephone and drink, so that the passengers feel very comfortable. There are also small buses that operate in short distances such as in suburbs and villages.

Bus becomes the primadonna of land transport in Japan (<http://www.id.emb-japan.go.jp>) (5 October 2015). In Japan, buses operate for almost 24 hours. There are several bus service providers in Japan, namely: JR Bus, Willer Express, Nishitetsu, Nohi Bus, Fujikyu Bus, and Keio Bus. Among these companies, JR Bus and Willer Express are the two biggest. However, Willer Express provides transportation service more for travel. JR Bus covers several areas: Hokkaido, Tohoku, Kanto, Tokai, Nishinippon, Chugoku, Shikoku and Kyushu. In urban areas, buses operate all the time. Almost all bus terminals or bus departure places are located near a railway station. The schedule of arrival is stucked on the front side of bus and if one does not know the bus destination, he or she

can ask the driver. In order to get in the bus, the passengers must wait in the halt since the bus is prohibited to stop in any place.

Bus drivers in Japan are friendly and will kindly help the passengers in trouble. Even, if a passenger uses a wheel chair, the driver will power off the machine to help him or her get on the bus. There are special place in the bus for the passengers with special need, elderly, and pregnant mothers. When asking the driver to stop, the passengers can push the button in the bus to signify. The bus ticket can be bought at the terminal, by phone, at convenience stores, and online. Today, many bus companies provide ticket reservation service via internet. The average price of bus ticket in Japan is ¥200.

There are three types of ticket available, namely: one way tickets, round trip tickets and booklets of multiple tickets. Round trip ticket is 10% cheaper than one way ticket. But in order to buy round trip ticket, we must decide the destination and time of departure first. With round trip ticket, the returning time from the destination is around 6-10 days later. So, if we arrive in the destination today, then we can reserve round trip ticket to the original place only after the next 6-10 days. Booklets of multiple tickets are the same as round trip ticket, but booklets of multiple tickets can cover 4-5 tickets at once and the ticket can

be bought three months before. Bus is one land transport which is efficient in Japan. Bus services are available day and night. Bus accommodation is available in every prefecture. For children between 6-12 years old, there is a discount for ticket purchase on D-7 until D-21 of departure day.

d. Car and Other Vehicles

Beside public vehicle, Japanese people also use private vehicle such as car, motorcycle, etc. but the number is not as many as in Indonesia. The price of a car in Japan is not so expensive, but the parking tax is very expensive. Japanese people prefer going on foot and are proud of using public transport. Moreover, there is another transportation which is very helpful and commonly used by Japanese people: Bicycle. Car rentals are also available in most big and medium cities, at airports and major railway station, by using international driving license. For ticketing, one can reserve online in a site like japan-guide.com. Not only reservation for airplane ticket, other vehicles and hotel can also be reserved through this website.

The high price of fuel set by the government for motor vehicle becomes the reason for people to reduce using private vehicle. Today, the fuel price in Japan is around 140 to 170 Yen per liter depending the quality of fuel. From all the above moves, there is still

another move playing important role in restricting the number of vehicles in Japan. The government of Japan is very strict in issuing Motor Vehicle Ownership Book (BPKB) and Vehicle Registration Certificate (STNK) (<http://Jepang.panduanwisata.com>). The owner of motor vehicle must be able to prove that he or she has had a parking place for the vehicle he or she is going to buy, or he or she has rented a parking place which is located maximum 2 km away from the owner's house with rental fee around 30,000 to 40,000 Yen per month. Against the owned or rental parking place, the authority can do proving over the proposed location.

Thus, if one wants to buy a new motor vehicle, he or she must sell the old one, or if the old vehicle is not sold, it should be scrapped through a scrapping service with the official fee starting from 70,000 to 150,000 Yen depending on the size of vehicle. The above moves are accompanied with authority delegation from the government of Japan to local government to fulfill the public need for transportation, and the government encourage private companies to provide vehicles for sufficient public transport which is easy to find and reaches almost all direction and destination. The government of Japan prioritize much on using train and bus as public transport.

The alignment of Japan government on public transport can be seen from

the special compensation provided for public transport owners through convenience and tax relief up to subsidy so that people can afford the ticket price (Redaksi www.dephub.go.id). To maintain the quality of public transport facilities and infrastructures, such as bus and train, in order to fulfill the predetermined service standard, the government stipulates the rules of operating public transport vehicles as well as supervision on the quality of facilities and infrastructures of all the existing systems. Japan occupies the Top Rank in automotive industry in Indonesia. Today, Japan is the biggest investor in automotive industry in Indonesia (<http://nasional.kompas.com/read/2015/06/18/17411182>) (4 October 2015).

Today, Indonesia is very attractive for foreign countries to increase and develop their investment. It is because of frequent promotion made appropriately by the government and supported by good investment climate as well as good rate of economic growth in Indonesia. Based on the note from Office of Indonesian Investment Coordinating Board in Japan, now (2015) Japan occupies the top rank of five foreign countries that make investment in Indonesia, followed by the USA, Singapore, the Netherlands, and Malaysia. The value of Japan's investment in Indonesia increases sharply. In the first quarter of 2013, the investment is USD 1,151,658.3

thousands. This amount is around 25% of the value of Japan's investment in Indonesia during 2012.

The highest rank of Japan's investment is in /transportation (automotive) industry as much as 68% of the total existing investment, including 4-wheel-or-more motor vehicle and motorcycle and spare parts of motor vehicle as much as USD 783,206.5 thousands, followed by other businesses, such as medical instrument industry, precision, optic and watch, then fishery, trade, reparation, construction, mineral and metal, property, food service, transportation service, metal, paper, textile, chemical, and electricity, gas, and water. Japan's investment in Indonesia is predicted to increase more and more, proven by the many number of prospective investors who are interested to invest have consulted Indonesian Embassy in Tokyo through the economic function, especially related to industry, trade, transportation, agriculture and forestry sectors (<http://www.id.emb-japan.go.jp>) (5 October 2015).

Furthermore, especially in transportation it can be explained that the increase of Japan's investment is in the form of factory capacity extension in order to increase the production quantity. Relocation of Japan's automotive factory from other South-East Asian countries to Indonesia contributes an increase of investment value during the first quarter of 2013. It

is noted that the manufacturers of Toyota, Nissan, Honda and Daihatsu as well as Japan motorcycle and motor vehicle spareparts manufacturers have extended their factories in Indonesia, especially in West Java, East Java, and DKI Jakarta considering that the supporting infrastructures for those factories are available more sufficiently than other provinces (<http://www.dephub.go.id>) (5 October 2015).

It can also be explained that the increase of production capacity is aimed to be the base for Japan's automotive products overseas which the products are mostly exported to Asian and Australian countries and the rests will be marketed domestically. The increase of investment tends to impact the increasing number of motor vehicles on streets in Indonesian cities. Although the factory extension and increased production results are aimed at export market, but it is very possible for changing the aim, that is the products will mostly be absorbed by Indonesian domestic market, regarding that the economic growth is fairly stable and the people purchasing power increases. If it happens, the ratio between the number of vehicles and the existing capacity in the near time will surely be imbalanced. Traffic jam will occur everywhere in worse condition than now.

The most effective way to overcome the traffic jam is to balance the number of vehicles and the existing road

capacity. Since it is difficult to increase the road capacity, then the effective way is to restrict or even to reduce the number of vehicles. Many tourists feel very satisfied with the transportation condition in Japan either land, or sea, or air transport.

The finding in this research is that Japan as an archipelago country has a good transportation system (land, sea, and air transports): modern, comfortable, secure, punctual, and well-organized; prime service; and being responsible and able to satisfy the road users, so that many Japan's citizens and common public prefer using public transport to driving private vehicle. It is much different from and in the contrary with the transportation system in Indonesia, i.e. road users like private vehicle such as car, motorcycle, etc. rather than the available public transport. Therefore, Indonesia needs to learn and imitate the development of Japanese transportation system.

Conclusion

Japan is a country that has modern, comfortable, secure, punctual, and well-organized transportation system. Transportation in Japan is famous for its punctuality, excellent services, and responsibility so that many citizens of Japan prefer using public transport to private vehicle. Transportation in Japan is the same as one in other countries. There are land, sea, and air transports. In

land, there is a railway transport which is excellent and becomes the main transport in Japan. Beside train, there is also subway. To connect islands in Japan, especially the four biggest islands (Hokkaido, Honshu, Shikoku, and Kyushu) there are ferries as the means of crossing.

In addition, Japan provides comprehensive international flight services through two main airlines, namely Japan Airlines and All Nippon Airways, as well as operator-based foreign airlines which fly around the world. Transportation in Japan is averagely accommodated by Japan Railway (JR), a state-owned enterprise (kokuei kaisha) comprising JR Bus and JR Train. There are also other companies that accommodate transportation equipment in Japan. But the biggest is JR.

Bibliography

- Hariyono, Wahyoeono, Dipo, and Prawesthi, Wahyu. 2015. Implementation of Passenger Transport with Public Transport in Surabaya. *Jurnal Manajemen Transportasi & Logistik (JM Translog)* Vol.02 No. 02, Juli (2015).
- Marbun, B.N. 1990. Kota Indonesia Masa Depan, Erlangga, Jakarta.1990, hal 86. (dalam Oktavianoor, Rakhmad dan Refyan). Paper Transportasi Jepang, Universitas Brawijaya Fakultas Teknik Jurusan Perencanaan Wilayah Dan Kota, 22 November (2010).

- Munawar, Ahmad. 2007. Pidato Pengembangan Transportasi yang Berkelanjutan, 1 August 2007, Web is accessed on 1 October 2015. <http://translate.google.co.id/translate?hl=id&langpair=en|id&u=http://sandacom.wordpress.com/2015/01/12/its-intelligent-transportation-systems-part-1-introduction/> Web is accessed on 19 October 2015/ 4.49 p.m
- Oktavianoor, Rakhmad, Refyan. 2010. Paper Transportasi Jepang, Universitas Brawijaya Fakultas Teknik Jurusan Perencanaan Wilayah Dan Kota, 22 November 2010. <http://regional.kompasiana.com/kondisi-kereta-api-indonesiahuman-error/technical-error> [20 Oktober 2010].
- Ogesby, F.D dan Hicks, R.G. 1995. Teknik Jalan Raya, 4th edition, volume 1 Erlangga, Jakarta, 1995, page 11 (in Oktavianoor, Rakhmad, Refyan). Paper Transportasi Jepang, Universitas Brawijaya Fakultas Teknik Jurusan Perencanaan Wilayah Dan Kota, 22 November (2010). <http://sipilugm.wordpress.com/sejarah-kereta-api-Jepang> [11 Agustus 2011].
- Rodrigue, J. 2004. The Geography of Transport System, e-book, chapter 1, www.people.hofstra.edu/geotr. <http://www.id.emb-japan.go.jp> [5Oktober]
- Taaffe, E.J., H.L. Gauthier, M.E. O'Kelly. 2008. *Geography of Transportation*. New Jersey: Prentice Hall. <http://Jepang.panduanwisata.com> [5Oktober]
- <http://www.dephub.go.id/15/05/2015> www.japan-guide.com [5Oktober]
- <http://nasional.kompas.com/read/17411182/belajarl原因.dari.sistem.transportasi>. <http://www.berkuliah.com/sistem-transportasi-jepang.html> [5Oktober].
- <http://studi-jerman.blogspot.com/2015/01/sistem-transportasi.html> <http://www.wisataJepang.html> [5Oktober]